

# BPC-300-7012

<b>MEASUREMENT</b> Box PC 280x155x81 mm	<b>CPU TYPE</b> uFC-BGA	<b>CPU</b> Pentium M
<b>CHIPSET</b> INTEL 852GM / ICH4	<b>DDR MEMORY</b> SODIMM 1GB	<b>I/O</b> USB/Serial/ PCMCIA
<b>LAN</b> 10/100 BASE-T	<b>AUDIO</b> AC'97	<b>Flash Disk</b> 1 x CF Disk Socket

## USER'S MANUAL

Copyright© 2004

**All Rights Reserved.**

The information in this document is subject to change without prior notice in order to improve the reliability, design and function. It does not represent a commitment on the part of the manufacturer.

Under no circumstances will the manufacturer be liable for any direct, indirect, special, incidental, or consequential damages arising from the use or inability to use the product or documentation, even if advised of the possibility of such damages.

This document contains proprietary information protected by copyright. All rights are reserved. No part of this manual may be reproduced by any mechanical, electronic, or other means in any form without prior written permission of the manufacturer.

## FCC Class B

This equipment has been tested and found to comply with limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference installations. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause interference to radio or television equipment reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: -Reorient or relocate the receiving antenna

-Move the equipment away from the receiver

-Plug the equipment into an outlet on a circuit different from that to which the receiver is connected

-Consult the dealer or an experienced radio/television technician for additional suggestions

*You are cautioned that any change or modifications to the equipment not expressly approve by the party responsible for compliance could void Your authority to operate such equipment.*

# Important Safety Instructions

- 1 Read these safety instructions carefully.
- 2 Keep this User's Manual for later reference.
- 3 Disconnect this equipment from any AC outlet before cleaning. Use a damp cloth. Do not use liquid or spray detergents for cleaning.
- 4 For plug-in equipment, the power outlet socket must be located near the equipment and must be easily accessible.
- 5 Keep this equipment away from humidity.
- 6 Put this equipment on a reliable surface during installation. Dropping it or letting it fall may cause damage.
- 7 The openings on the enclosure are for air convection. Protect the equipment from overheating. **DO NOT COVER THE OPENINGS.**
- 8 Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
- 9 Position the power cord so that people cannot step on it. Do not place anything over the power cord.
- 10 All cautions and warnings on the equipment should be noted.
- 11 If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient overvoltage.
- 12 Never pour any liquid into an opening. This may cause fire or electrical shock.
- 13 Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.
- 14 If one of the following situations arises, get the equipment checked by service personnel:
  - a. The power cord or plug is damaged.
  - b. Liquid has penetrated into the equipment.
  - c. The equipment has been exposed to moisture.
  - d. The equipment does not work well, or you cannot get it to work according to the user's manual.
  - e. The equipment has been dropped and damaged.
  - f. The equipment has obvious signs of breakage.

## Warning

**DO NOT LEAVE THIS EQUIPMENT IN AN UNCONTROLLED ENVIRONMENT WHERE THE STORAGE TEMPERATURE IS BELOW -20° C (-4° F) OR ABOVE 60° C (140° F). THIS MAY DAMAGE THE EQUIPMENT.**

Ordering Information

BPC-300-7012/CM600

Intel Celeron M 600MHz Fanless Box PC with Slim CD-ROM

BPC-300-7012/CM600 w/o Slim CD-ROM

Intel Celeron M 600MHz Fanless Box PC without Slim CD-ROM

BPC-300-7012/CM1G

Intel Celeron M 1GHz Fanless Box PC with Slim CD-ROM

BPC-300-7012/CM1G w/o Slim CD-ROM

Intel Celeron M 1GHz Fanless Box PC without Slim CD-ROM

BPC-300-7012/CM800

Intel Celeron M 800MHz Fanless Box PC with Slim CD-ROM

BPC-300-7012/CM800 W/O Slim CD-ROM

Intel Celeron M 800MHz Fanless Box PC without Slim CD-ROM

BPC-300-7012/PM1.4G

Intel Celeron M 1.4GHz Fanless Box PC with Slim CD-ROM

BPC-300-7012/PM1.4G W/O Slim CD-ROM

Intel Celeron M 1.4GHz Fanless Box PC without Slim CD-ROM

Memory Module

DDR SDRAM 128MB SO-DIMM 200Pin

DDR SDRAM 256MB SO-DIMM 200Pin

DDR SDRAM 512MB SO-DIMM 200Pin

DDR SDRAM 1GB SO-DIMM 200Pin

DC12V/5.16A Power Adapter

PAD-PW-062A-1Y12A

CD-ROM

24X Slim Type CD-ROM

Introduction ..... 4

Getting Started ..... 4

Hardware Installation ..... 7

Audio Connector ..... 12

Power Connector ..... 12

Serial Port Connector ..... 13

PS/2 Keyboard & Mouse ..... 13

Fast Ethernet Connectors..... 14

CRT SVGA ..... 14

RESET BUTTON & Connector ..... 14

Power On & HDD Status LED ..... 14

POWER SWITCH CONNECTOR ..... 14

AWARD BIOS Setup ..... 15

POST Codes ..... 24

Howto : Flash the BIOS ..... 28

Warranty ..... 28

About this User's Manual

This User's Manual provides general information and installation instructions about the Box PC. This User's Manual is intended for experienced users and integrators with hardware knowledge of personal computers. If you are not sure about any description in this User's Manual, please consult your vendor before further handling.

## Introduction

Box PC is targeted at many different application fields. By adopting Box PC, you can pinpoint specific markets, such as Thin Client, KIOSK, information booth, GSM Server, environment-critical and space-critical applications.

BPC-300-7012 adopts a modularized concept of ETX CPU module and carrier board, which can speed your time-to-market for any OEM projects. Modular Box PC can be easily modified to fit many different applications according to customers' requests.

### Compact-sized

The kernel of BPC-300-7012 is EmETX-i701, which is an ETX embedded board. The whole system consumes only a few space.

### CRT QXGA

BPC-300-7012 can support super 3D video performance and consumes minimal power, resolution up to QXGA 2048 x 1536.

### Advanced storage solution

BPC-300-7012 comes with Compact Flash & PCMCIA slots, which offer a better, faster and more cost-effective expansibilities for various applications.

### Trustworthy

The onboard Watchdog Timer can invoke system RESET when your application loses control over the system.

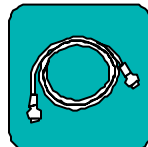
## Getting Started

This section will help you have your BPC-300-7012 up and running smoothly. For further information, please refer to BPC-300-7012 Quick Installation Guide.

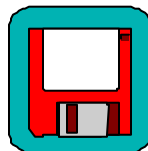
### PACKING LIST



BPC-300-7012



1 x 62W DC Power Adapter



1 x Driver CD

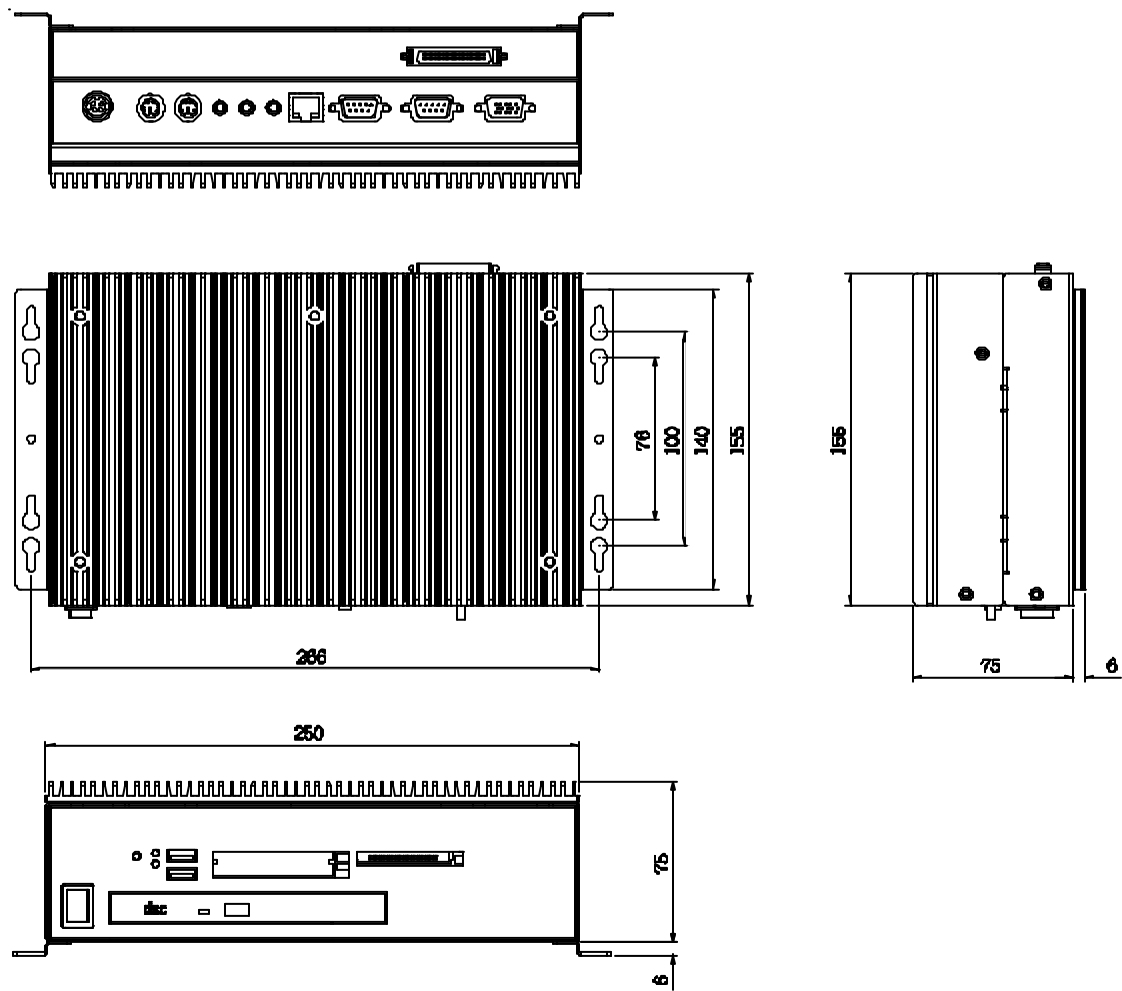


BPC-300-7012 Quick Installation

Before up and running, please make sure the package contains all of above accessories.

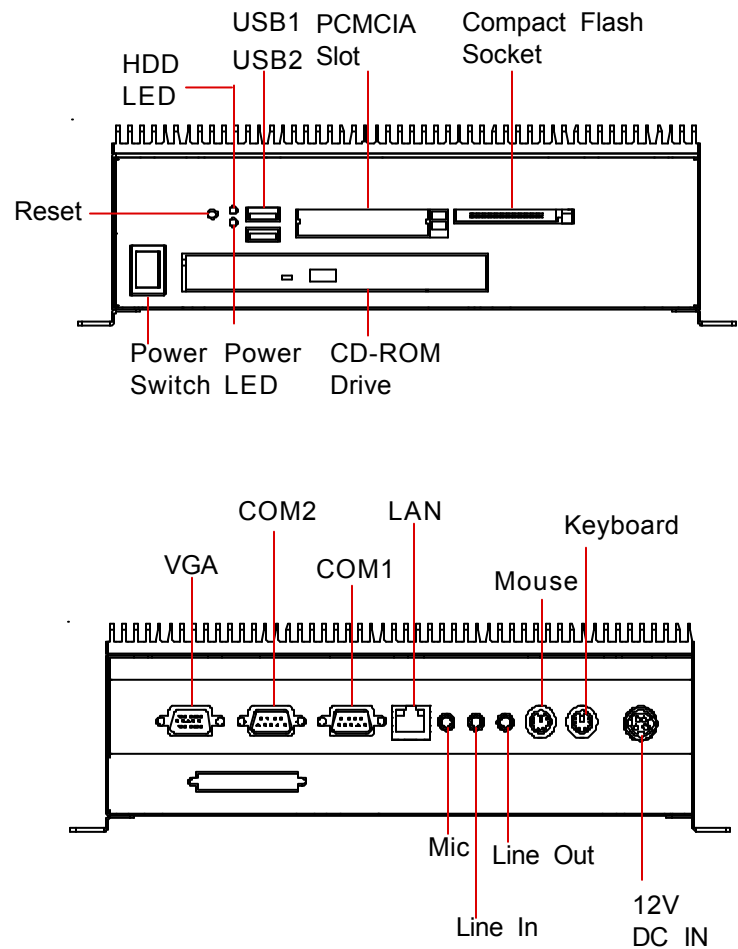
If any of the above items is damaged or missing, contact your vendor immediately.

# Dimension



Unit : mm

# Overview



Specification		
Model		BPC-300-7012
System	CPU	Intel Ultra Low Voltage Celeron 600Mhz CPU up to Low Voltage Pentium M 1.4GHz FSB 400 MHz
	Cache	2MByte Max
	Memory	1 x 200Pin SO-DIMM up to 1GB DDR SDRAM
	VRAM	Up to 64MB Shared memory
	Chipset	Intel 852GM + Intel ICH4
	LAN	Intel 82562EZ 10/100 Base-T
	Watchdog Timer	255-level Reset
External I/O	Serial Port	2 x RS-232 ports (COM1/2)
	USB Port	2 x USB 2.0
	KB & Mouse	1 x PS/2 K/B and Mouse
	LAN	1 x RJ-45
	Audio	Mic-in, Line-in, Line-out
	Display	1 x DB15
	Expansion Bus	2 x PCMCIA
Storage	Hard Disk Drive	1 x 2.5" HDD Bay
	Combo Drive	Optional
	CD-ROM Drive	Optional
	Flash Disk	1 x Type II Compact Flash Disk Socket (non hot-swappable)
Power Requirement	Input Voltage	DC 12V / 6A Input
Mechanical & Environment	Operating Temperature	0 ~ 40° C
	Relative Humidity	10 ~ 95% @ 40° , non-condensing
	Dimension (W x D x H)	280 x 155 x 81mm
	Weight	2.4Kg
	Mounting	Wallmount or Desktop

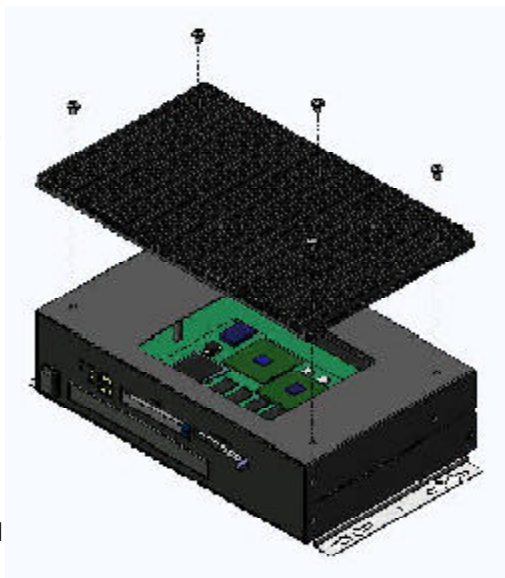
## Hardware Installation

### Basic installation

1. Memory module
2. ETX CPU Module
3. Hard Disk Drive
4. CD-ROM Drive

### Removing Top Cover

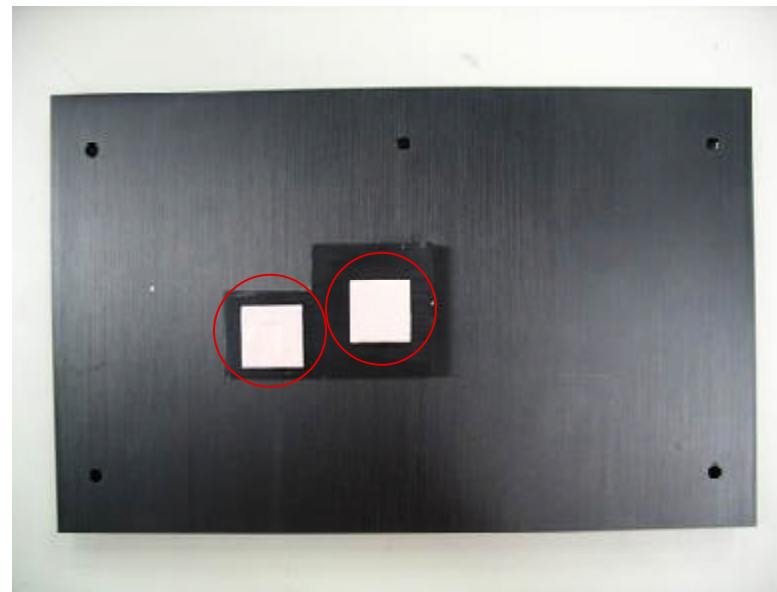
1. On the top of Box PC, locate the five screws that secure the top cover to the chassis.
2. Use screw driver to remove the top cover screws. Keep the screws safely for later use.
3. Pull the top cover slightly upward the main unit until the side tabs are disengaged from chassis.
4. If you feel it's hard to pull up the top cover, just loose the screws that secure the main unit on each side a little bit. Then, you may pull up the top cover easily.



### Before hardware handling

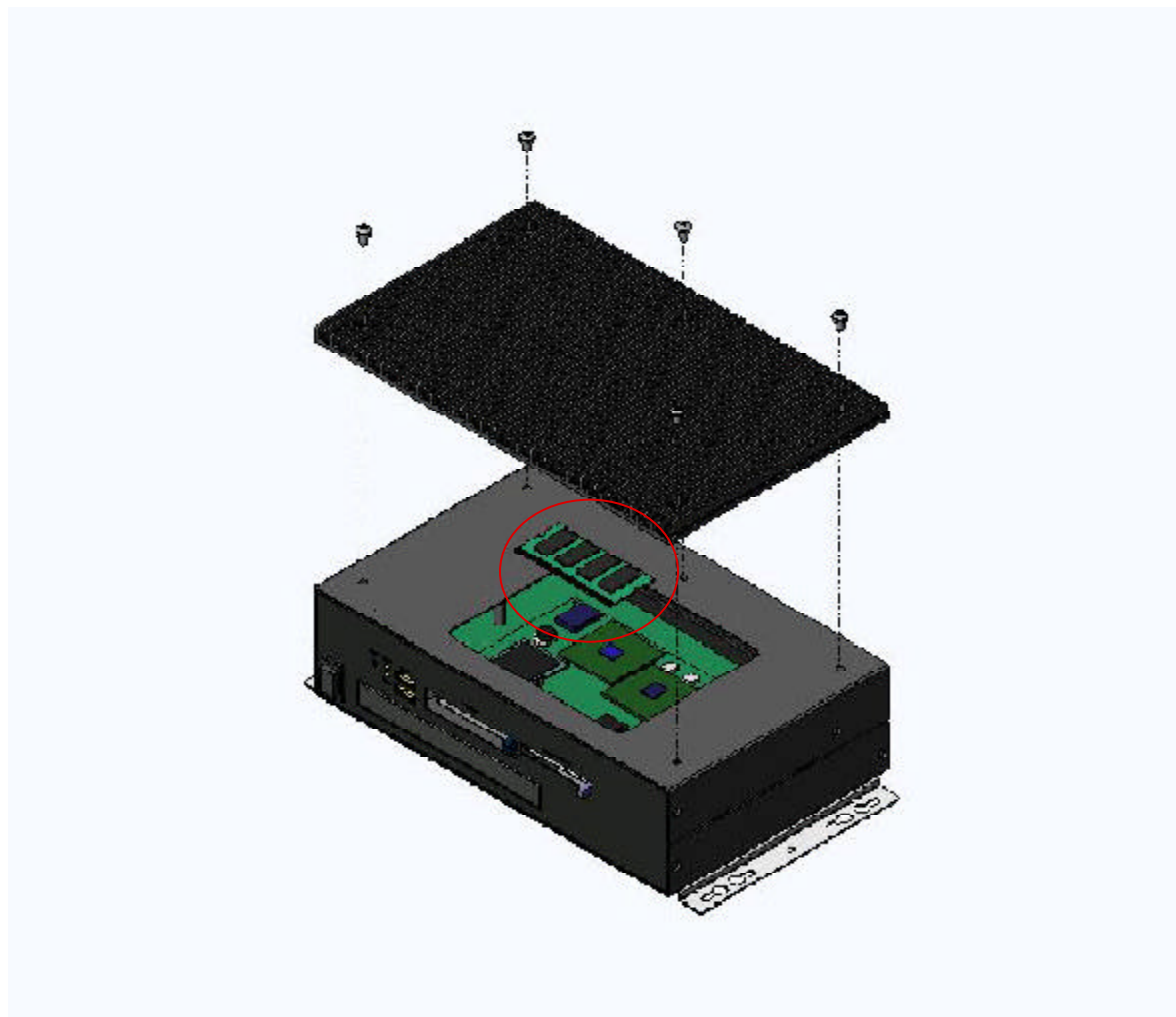
If thermal pad is misplaced due to frequent hardware maintenance, you need to replace it in order to bring heat radiating mechanism into full play.

Turn the top cover upside down. Replace the old thermal pad on heat sink with new one.



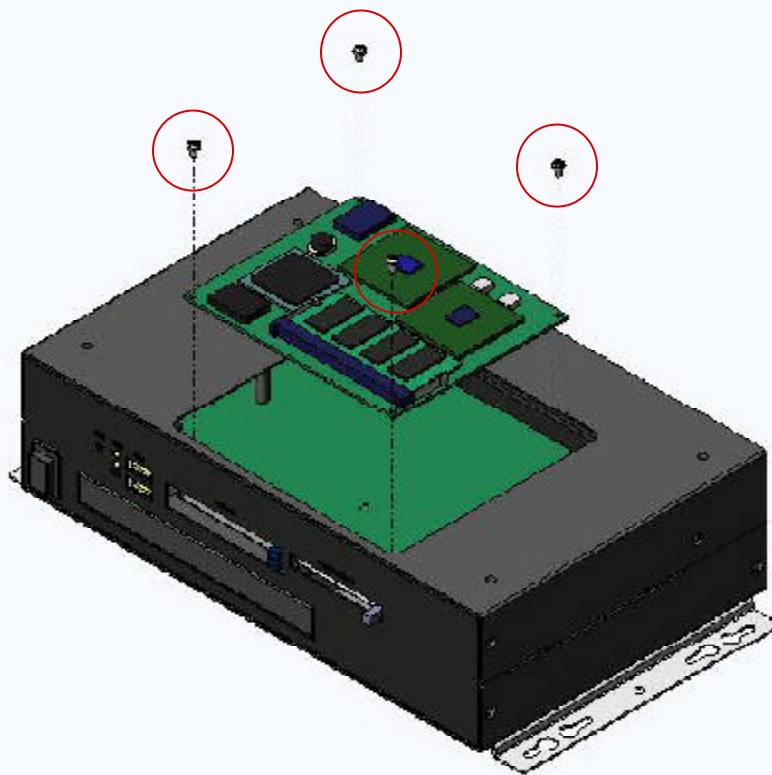
## Installing Memory Module

1. After removing the top cover, you may easily find the SO-DIMM Socket.
2. Insert the SO-DIMM memory module.



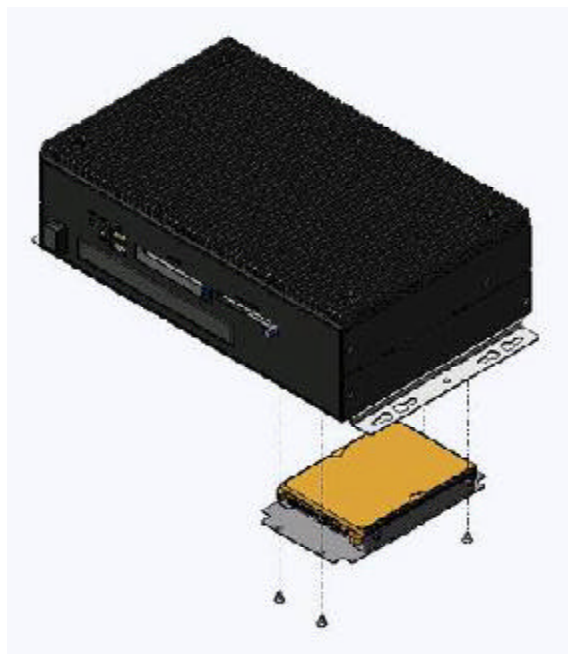
## Installing ETX CPU Module

1. Locate the four screws which secure ETX CPU module and carrier board.
2. Use screw driver to remove the screws. Keep the screws safely for later use.
3. Place the ETX CPU module slightly toward the ETX connectors of carrier board, and press it to engage them.

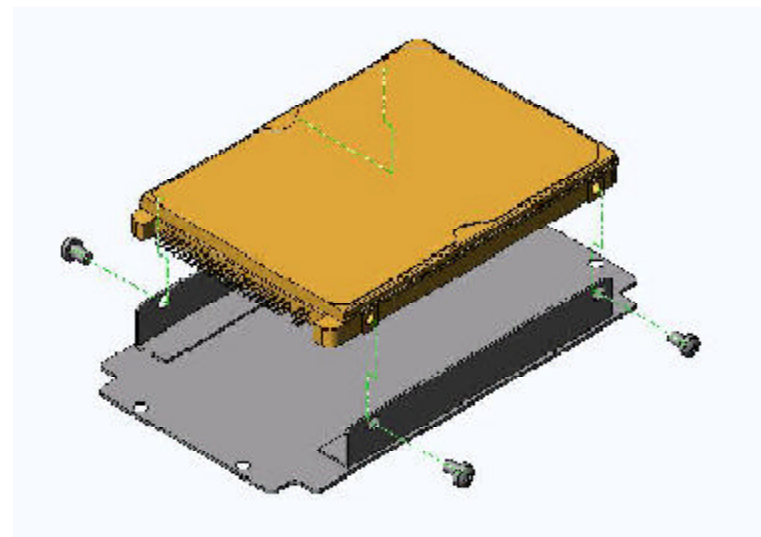


## Installing 2.5" Hard Disk Drive

1. Locate the screws on the bottom of main unit which secure the HDD housing.
2. Use screw driver to remove the screws. Keep the screws safely for later use.
3. Disengage the housing of hard disk drive.

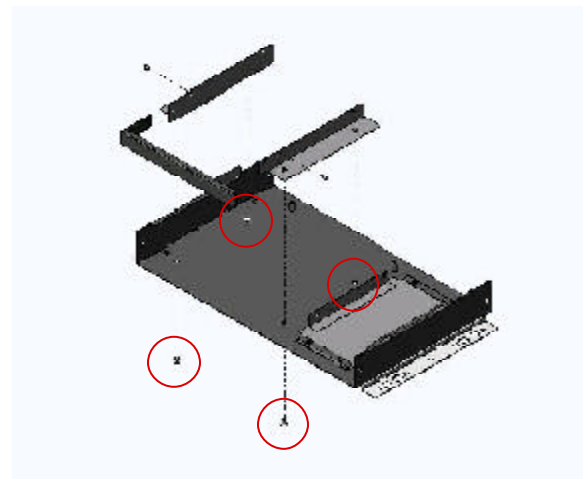
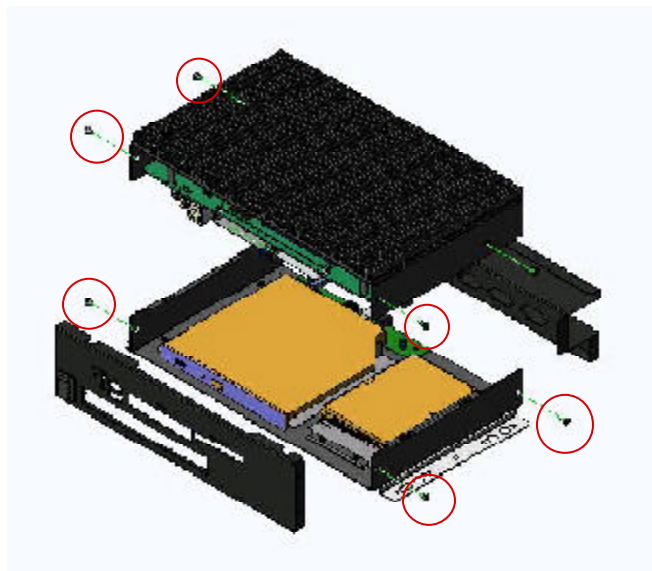


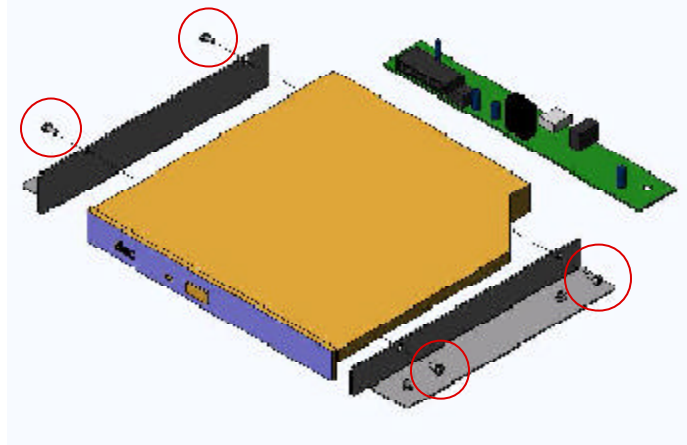
4. Unscrew the screws which secure the HDD and housing.
5. Put the HDD on housing.
6. Put the HDD module back to the system and screw it on.



## Installing CD-ROM Drive

1. Locate the screws which secure the top cover and side panels.
2. Use screw driver to remove the screws.  
Keep the screws safely for later use.
3. Locate the screws which secure the CD-ROM drive housing and unscrew them.





4. Locate the screws which secure the CD-ROM drive housing and main unit, then assembly them as above illustration.
5. Re-assemble CD-ROM drive unit and main unit.

## Power Connector

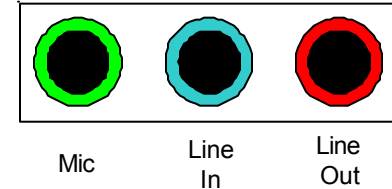
Connector : PWR1  
Type : Mini DIN



Pin	Description
1	+12V
2	+12V
3	GND
4	GND

## Audio Connector

Connector : CN1  
Type : Audio jack

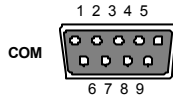


## Serial Port Connectors

### COM1 RS-232C Ports on bracket

Connector : COM1

Type : external 9-pin D-sub male connector on bracket



Pin	Description	Pin	Description
1	DCD (or 5V)	2	RXD
3	TXD	4	DTR
5	GND	6	DSR
7	RTS	8	CTS
9	RI (or +12V)		

### COM2 with RS-232/422/485 Mode

Connector : **COM2**

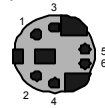
Type : external 9-pin D-sub male connector on bracket

Pin	Description	Pin	Description
1	DCD2(422TXD-/485DATA-)	2	RXD2(422TXD+/485DATA+)
3	TXD2(422RXD+)	4	DTR2(422RXD+)
5	GND	6	DSR2
7	RTS2	8	CTS2
9	RI		

## PS/2 Keyboard & Mouse

Connector: **K/B**

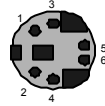
Type: external 6-pin Mini DIN connector on bracket



Pin	Description
1	KEYBOARD DATA
2	NC
3	GND
4	VCC
5	KEYBOARD CLK
6	NC

Connector: **Mouse**

Type: external 6-pin Mini DIN connector on bracket



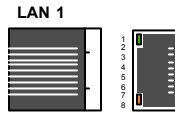
Pin	Description
1	MOUSE DATA
2	NC
3	GND
4	VCC
5	MOUSE CLK
6	NC

## Fast Ethernet Connector

LAN Port (10/100Mbps)

Connector : **LAN1**

Type : external RJ-45 on bracket

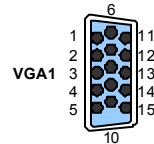


Pin	Description	Pin	Description
1	TX +	2	TX -
3	TCT	4	GND
5	GND	6	RCT
7	RX +	8	RX -
9	LINK LED	10	3VSB
11	ACT LED	12	3VSB

## CRT SVGA

Connector : **VGA1**

Type : external 15-pin D-sub female connector on bracket



Pin	Description	Pin	Description	Pin	Description
1	RED	6	GND	11	NC
2	GREEN	7	GND	12	VDDAT
3	BLUE	8	GND	13	HSYNC
4	NC	9	Vcc	14	VSYN
5	GND	10	GND	15	VDCLK

## Reset Button & Connector

### RESET BUTTON PIN HEADER

Connector: J2

Type: onboard 1\*2pin 2.54mm header



Reset Button



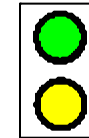
J2

Pin	Description
1	GND
2	RESET

## Power On & HDD Status LED

GREEN STATUS: POWER ON

YELLOW STATUS: HDD W/R



## Power Switch Connector

Connector: J1

Type: onboard 1\*2pin 2.54mm header



Power Switch



J1

Pin	Description
1	POWER ON
2	GND

## AWARD BIOS Setup

The BPC-300-7012 uses the Award PCI/ISA BIOS for the system configuration. The Award BIOS setup program is designed to provide the maximum flexibility in configuring the system by offering various options which could be selected for end-user requirements. This chapter is written to assist you in the proper usage of these features.

To access AWARD PCI/ISA BIOS Setup program, press <Del> key. The Main Menu will be displayed at this time.



Once you enter the AwardBIOS™ CMOS Setup Utility, the Main Menu will appear on the screen. The Main Menu allows you to select from several setup functions and two exit choices. Use the arrow keys to select among the items and press <Enter> to accept and enter the sub-menu.

### Setup Items

The main menu includes the following main setup categories. Recall that some systems may not include all entries.

#### Standard CMOS Features

Use this menu for basic system configuration.

#### Advanced BIOS Features

Use this menu to set the Advanced Features available on your system.

#### Advanced Chipset Features

Use this menu to change the values in the chipset registers and optimize your system's performance.

#### Integrated Peripherals

Use this menu to specify your settings for integrated peripherals.

#### Power Management Setup

Use this menu to specify your settings for power management.

#### PnP / PCI Configuration

This entry appears if your system supports PnP / PCI.

#### PC Health Status

This entry helps you to monitor the status of PC.

#### Load Optimized Defaults

Use this menu to load the BIOS default values that are factory settings for optimal performance system operations. While Award has designed the custom BIOS to maximize performance, the factory has the right to change these defaults to meet their needs.

#### Set Password

Use this menu to set User and Supervisor Passwords.

#### Save & Exit Setup

Save CMOS value changes to CMOS and exit setup.

#### Exit Without Save

Abandon all CMOS value changes and exit setup.

Standard CMOS Setup



**Date**  
The BIOS determines the day of the week from the other date information; this field is for information only.

**Time**  
The time format is based on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00. Press the « or ( key to move to the desired field . Press the PgUp or PgDn key to increment the setting, or type the desired value into the field.

**IDE Primary Master/Slave**  
**IDE Secondary Master/Slave**  
Options are in sub menu (see page 30)

**Drive A, B**  
Select the correct specifications for the diskette drive(s) installed in the computer.

- None :** No diskette drive installed
- 360K ;** 5.25 in 5-1/4 inch PC-type standard drive
- 1.2M ;** 5.25 in 5-1/4 inch AT-type high-density drive
- 720K ;** 3.5 in 3-1/2 inch double-sided drive
- 1.44M ;** 3.5 in 3-1/2 inch double-sided drive
- 2.88M ;** 3.5 in 3-1/2 inch double-sided drive

**Video** Select the type of primary video subsystem in your computer. The BIOS usually detects the correct video type automatically. The BIOS supports a secondary video subsystem, but you do not select it in Setup.

**Halt On** During the power-on self-test (POST), the computer stops if the BIOS detects a hardware error. You can tell the BIOS to ignore certain errors during POST and continue the boot-up process. These are the selections:

- No errors POST does not stop for any errors.
- All errors If the BIOS detects any non-fatal error, POST stops and prompts you to take corrective action.
- All, But Keyboard POST does not stop for a keyboard error, but stops for all other errors.
- All, But Diskette POST does not stop for diskette drive errors, but stops for all other errors.
- All, But Disk/Key POST does not stop for a keyboard or disk error, but stops for all other errors.

BIOS Features Setup



**Virus Warning**

Allows you to choose the VIRUS Warning feature for IDE Hard Disk boot sector protection. If this function is enabled and someone attempt to write data into this area, BIOS will show a warning message on screen and beep.

Enabled Activates automatically when the system boots up causing a warning message to appear when anything attempts to access the boot sector or hard disk partition table.

Disabled No warning message will appear when anything attempts to access the boot sector or hard disk partition table.

**CPU L1 & L2 Cache**

This item allows you to enable/disable CPU L1 & L2 Cache.  
The choice: Enabled, Disabled.

**CPU L3 Cache**

This item allows you to enable/disable CPU L3 Cache.  
The choice: Enabled, Disabled.

**Quick Power On Self Test**

This category speeds up Power On Self Test (POST) after you power up the computer. If it is set to Enable, BIOS will shorten or skip some check items during POST. Enabled : Enable quick POST. Disabled : Normal POST

**First/Second/Third Boot Device**

The BIOS attempts to load the operating system from the devices in the sequence selected in these items. The choices are : Floppy, LS/ZIP, HDD, SCSI, CDROM, Disabled.

**Swap Floppy Drive**

If the system has two floppy drives, you can swap the logical drive name assignments.  
The choice: Enabled/Disabled.

**Boot Up Floppy Seek**

Seeks disk drives during boot up. Disabling speeds boot up.  
The choice: Enabled/Disabled.

**Boot Up NumLock Status**

Select power on state for NumLock. The choice: Enabled/Disabled.

**Gate A20 Option**

Select if chipset or keyboard controller should control GateA20.  
Normal A pin in the keyboard controller controls GateA20  
Fast Lets chipset control GateA20

**Typematic Rate Setting**

Key strokes repeat at a rate determined by the keyboard controller. When enabled, the typematic rate and typematic delay can be selected.  
The choice: Enabled/Disabled.

---

### Security Option

Select whether the password is required every time the system boots or only when you enter setup.

**System** The system will not boot and access to Setup will be denied if the correct password is not entered at the prompt.

**Setup** The system will boot, but access to Setup will be denied if the correct password is not entered at the prompt.

**Note** To disable security, select PASSWORD SETTING at Main Menu and then you will be asked to enter password. Do not type anything and just press <Enter>, it will disable security. Once the security is disabled, the system will boot and you can enter Setup freely.

### APIC Mode

Select

### OS Select For DRAM > 64MB

Select the operating system that is running with greater than 64MB of RAM on the system. The choice: Non-OS2, OS2.

### Video BIOS Shadow

Enabled this copies the video BIOS from ROM to RAM, effectively enhancing performance, and reducing the amount of upper memory available by 32KB (the C0000~C7FFF area of memory between 640 KB and 1 MB is used).

### C8000-CBFFF Shadow

Enabling any of the C8000~CBFFF segments allows components to move their firmware into these upper memory segments. However your computer can lock-up doing so, because some devices don't like being shadowed at those particular 16 KB segments of upper memory.

### Small Logo(EPA) Show

[Enabled]: If you want to show your logo, please enable it.

[Disabled]:

When this item disabled, logo(EPA) will not show on screen.

### EEPROM Write Protect

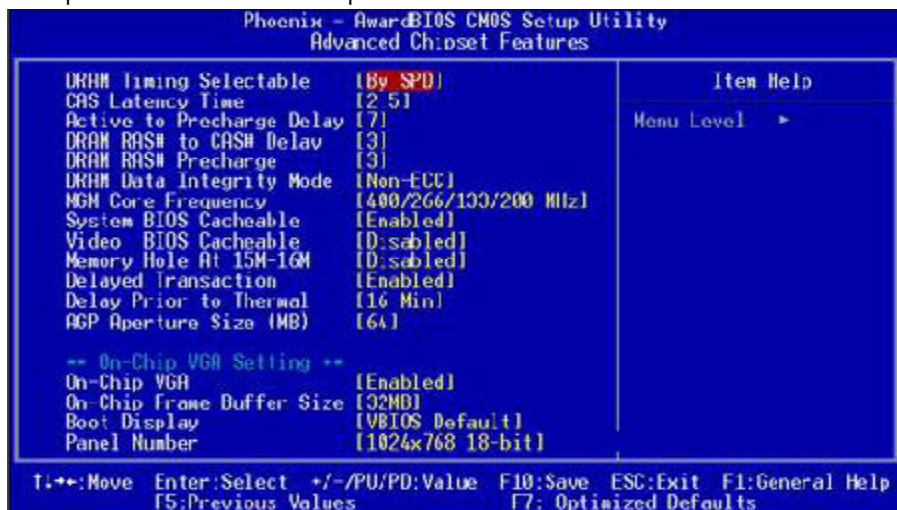
All the configuration data is stored in a type of nonvolatile memory chip called an EEPROM. When it's enabled, it disables all writes to the configuration EEPROM. This locks your current configuration against accidental or unauthorized changes.

**Note** - In Windows 95, double click 'Computer' within Device Manager and select 'Memory'. This will tell you what segments (if any) are being shadowed For DOS you can

use MSD.EXE to see what segments are claimed.

CC000-CFFFF - D0000-D3FFF - D4000-D7FFF - D8000-DBFFF and  
DC000-DFFFF - Same as above.

## Chipset Features Setup



### DRAM Timing Selectable

The option is "Manual" or "by SPD".

### CAS Latency Time

When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing.

### Active to Precharge Delay

Delay that results when two different rows in a memory chip are addressed one after another.

### DRAM RAS-to-CAS Delay

This field let's you insert a timing delay between the CAS and RAS strobe signals, used when DRAM is written to, read from, or refreshed. Fast gives faster performance; and Slow gives more stable performance. This field applies only when synchronous DRAM is installed in the system.

### DRAM RAS Precharge

If an insufficient number of cycles is allowed for the RAS to accumulate its charge before DRAM refresh, the refresh may be incomplete and the DRAM may fail to retain data. Fast gives faster performance; and Slow gives more stable performance. This field applies only when synchronous DRAM is installed in the system.

### DRAM Data Integrity Mode

This BIOS feature controls the ECC feature of the memory controller. The option is ECC or Non-ECC.

### MGM Core Frequency

The option includes 400/266/133/200 MHz.

### System BIOS Cacheable

Selecting Enabled allows caching of the system BIOS ROM at F0000h-FFFFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result.

### Video BIOS Cacheable

Select Enabled allows caching of the video BIOS, resulting in better system performance. However, if any program writes to this memory area, a system error may result.

### Memory Hole At 15M-16M

You can reserve this area of system memory for ISA adapter ROM. When this area is reserved, it cannot be cached. The user information of peripherals that need to use this area of system memory usually discusses their memory requirement.

### Delayed Transaction

The chipset has an embedded 32-bit posted write buffer to support delay transactions cycles. Select Enabled to support compliance with PCI specification version 2.1

### Delay Prior to Thermal

This BIOS feature is only valid for systems that are powered by 0.13μ Intel Pentium 4 processors with 512KB L2 cache. These processors come with a Thermal Monitor which actually consists of a on-die thermal sensor and a Thermal Control Circuit (TCC). The options includes 4 Minutes, 8 Minutes, 16 Minutes, 32.

### AGP Aperture Size

This field determines the effective size of the Graphic Aperture used for a particular GMCH configuration. It can be updated by the GMCH-specific BIOS configuration sequence before the PCI standard bus enumeration sequence takes place. If it is not updated then a default value will select an aperture of maximum size.

### On-Chip VGA

If your system contains a VGA controller and you want to activate it, select Enabled. The next option will become available.

**On-Chip Frame Buffer Size**

The On-Chip Frame Buffer Size can be set to 1MB or 8MB. This memory is shared with system memory.

**Boot Display**

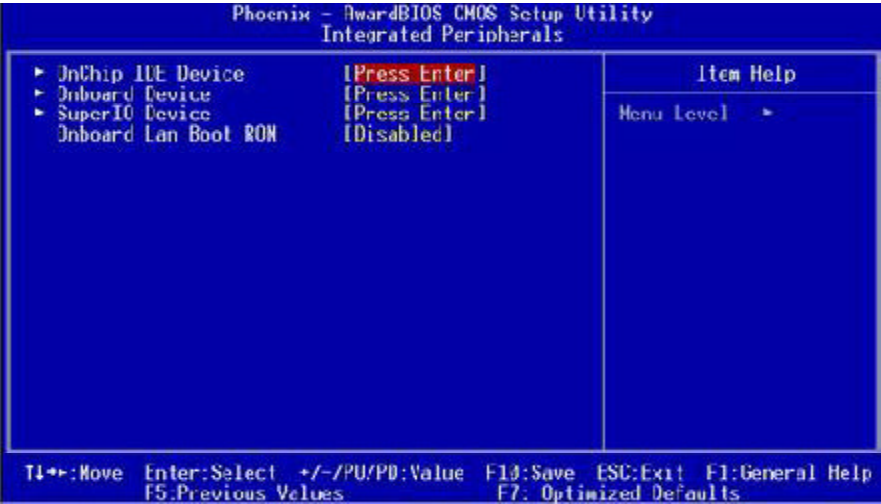
This option let you select the display devices.

**Panel Number**

This option let you select the type of panel. Available options are:

640 x 480	18bit
800 x 600	18bit
1024 x 768	18bit
1280 x 1024	18bit
1400 x 1050	18bit 2H (Reduced Blanking LVDS)
1400 x 1050	18bit 2H (Non-reduced Blanking LVDS)
1600 x 1200	18bit 2H
1024 x 768	24bit
1280 x 1024	24bit 2H
1400 x 1050	24bit 2H
1600 x 1200	24bit 2H

Integrated Peripherals



**OnChip IDE Device**

The integrated peripheral controller contains an IDE interface with support for two IDE channels. Select Enabled to activate each channel separately.

**Onboard Device**

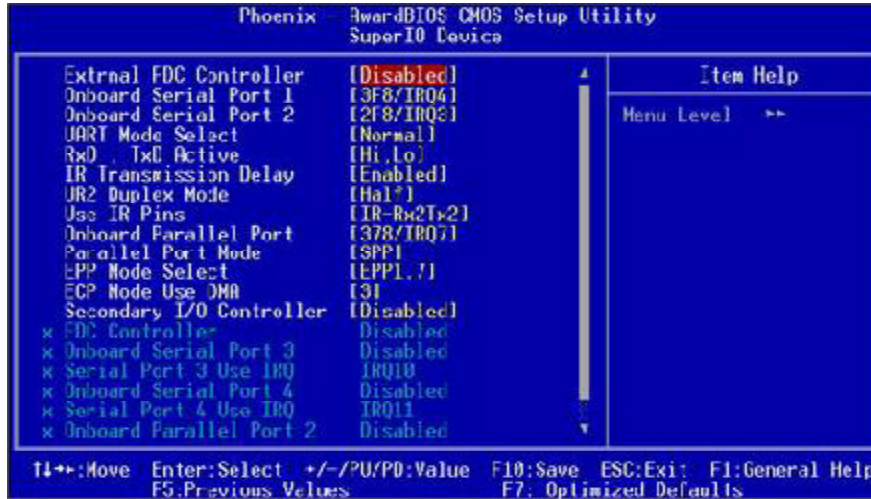
This field let you set onboard devices.

**Super I/O Device**

**>Onboard LAN Boot ROM**

The default setting is "Disabled" that to shorten the booting time.

## Super I/O Device



### External FDC Controller

Select "Enabled" to activate the on-board FDD  
Select "Disabled" to activate an add-on FDD

### Onboard Serial Port 1 & 2

Select an address and corresponding interrupt for the first/second serial port. The default value for the first serial port is "3F8/IRQ4" and the second serial port is "2F8/IRQ3".

### UART Mode Select

This item allows you to select UART mode. The choices: IrDA, ASKIR, Normal.

### RxD, TxD Active

This BIOS feature allows you to set the infra-red reception (RxD) and transmission (TxD) polarity. Common Options : Hi, Hi or Lo, Lo or Hi, Lo or Lo, Hi

### IR Transmission Delay

This option is to set whether the IR Transmission Delay is enabled. The available setting values are Disabled and Enabled.

### IR2 Duplex Mode

This item allows you to select the IR half/full duplex function.

### Use IR Pins

This item allows you to select IR transmission routes, IR-Rx2Tx2, RxD2 and TxD2.

### Onboard Parallel Port

Select the interrupt of Parallel Port.

### Onboard Parallel Mode

Select an operating mode for the parallel port. Mode options are 3BC/IRQ7, 378/IRQ7, 278/IRQ5, and Disable.

### EPP Mode Select

You can use this feature to choose which version of EPP to use. For better performance, use EPP 1.9. But if you are facing connection issues, try setting it to EPP 1.7. Most of the time, EPP 1.9 will work perfectly well.

### ECP Mode Use DMA

Select a DMA channel if parallel Mode for using ECP mode: 3 or 1.

### Secondary I/O Controller

This item let you disable or enable Secondary I/O Controller.

Power Management Setup



**Power Supply Type**  
Select the power supply type.

**Power Management**  
There are 4 selections for Power Management, 3 of which have fixed mode :

- Disabled (default)      No power management. Disables all four modes.
- Min. Power Saving      Minimum power management. Doze Mode = 1 hr., Standby Mode = 1 hr., Suspend Mode = 1 hr.,
- Max. Power Saving      Maximum power management -- ONLY AVAILABLE FOR SL CPU's.. Doze Mode = 1 min., Standby Mode = 1 min., Suspend Mode = 1 min.
- User Defined      Allows you to set each mode individually. When not disabled, each of the ranges are from 1 min. to 1 hr.

**Video Off Method**  
This determines the manner in which the monitor is blanked.

- V/H SYNC+Blank      cause the system to turn off the vertical and horizontal synchroni- zation signals and writes blanks to the screen.
- Blank Screen      This option only writes blanks to the screen.
- DPMS      Initial display power management signaling.HDD Power Down is always set independently

**Video Off In Suspend**  
Controls what causes the display to be switched off  
Suspend -> Off      Always On      All Mode -> Off

**Modem Use IRQ**  
Name the interrupt request (IRQ) assigned to the modem (if any) on your system. Activity of the selected IRQ always awakens the system.

**Suspend Mode**  
When the suspend mode has been enabled after the selected period of system inactivity, all devices except CPU will be shut down.

**CPU THRM-Throttling**  
This BIOS feature determines the clock speed of the processor when it is in the Suspend To RAM (STR) power saving mode. It has no effect when the processor is in normal active mode. Available options for this BIOS feature are set values of the processor's power consumption. They range from a low of 12.5% to a high of 87.5%.

## PNP/PCI Configuration



This section describes configuring the PCI bus system. PCI, or Personal Computer Interconnect, is a system which allows I/O devices to operate at speeds nearing the speed the CPU itself uses when communicating with its own special components.

### Reset Configuration Data

Normally, you leave this field Disabled. Select Enabled to reset ESCD (Extended System Configuration Data) when you exit Setup if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the operating system cannot boot.

### Resource Controlled By

The Award Play and Play BIOS can automatically configure all the boot and Plug-and-Play compatible devices. If you select Auto, all the interrupt request (IRQ) and DMA assignment fields disappear, as the BIOS automatically assigns them.

### PCI/VGA Palette Snoop

Normally this option is always Disabled! Nonstandard VGA display adapters such as overlay cards or MPEG video cards may not show colors properly. Setting Enabled should correct this problem. If this field set Enabled, any I/O access on the ISA bus to the VGA card's palette registers will be reflected on the PCI bus. This will allow overlay cards to adapt to the changing palette colors.

### PCI IRQ Activated by

[Level]

## PC Health Status



This section describes CPU temperature for the system.

### Shutdown Temperature

This item allows you to set up the CPU shutdown Temperature. This item only effective under Windows 98 ACPI mode.

## POST Codes

The following codes are not displayed on the screen. They can only be viewed on the LED display of a so called POST card. The codes are listened in the same order as the according functions are executed at PC startup. If you have access to a POST Card reader, you can watch the system perform each test by the value that's displayed. If the system hangs (if there's a problem) the last value displayed will give you a good idea where and what went wrong, or what's bad on the system board.

### CODE DESCRIPTION OF CHECK

CFh	Test CMOS R/W functionality.
C0h	Early chipset initialization: -Disable shadow RAM -Disable L2 cache (socket 7 or below) -Program basic chipset registers
C1h	Detect memory -Auto-detection of DRAM size, type and ECC. -Auto-detection of L2 cache (socket 7 or below)
C3h	Expand compressed BIOS code to DRAM
C5h	Call chipset hook to copy BIOS back to E000 & F000 shadow RAM.
0h1	Expand the Xgroup codes locating in physical address 1000:0
02h	Reserved
03h	Initial Superio_Early_Init switch.
04h	Reserved
05h	1. Blank out screen 2. Clear CMOS error flag
06h	Reserved
07h	1. Clear 8042 interface 2. Initialize 8042 self-test
08h	1. Test special keyboard controller for Winbond 977 series Super I/O chips. 2. Enable keyboard interface.
09h	Reserved

0Ah	1. Disable PS/2 mouse interface (optional). 2. Auto detect ports for keyboard & mouse followed by a port & interface swap (optional). 3. Reset keyboard for Winbond 977 series Super I/O chips.
0Bh	Reserved
0Ch	Reserved
0Dh	Reserved
0Eh	Test F000h segment shadow to see whether it is R/W-able or not. If test fails, keep beeping the speaker.
0Fh	Reserved
10h	Auto detect flash type to load appropriate flash R/W codes into the run time area in F000 for ESCD & DMI support.
11h	Reserved
12h	Use walking 1's algorithm to check out interface in CMOS circuitry. Also set real-time clock power status, and then check for override.
13h	Reserved
14h	Program chipset default values into chipset. Chipset default values are MODBINable by OEM customers.
15h	Reserved
16h	Initial onboard clock generator if Early_Init_Onboard_Generator is defined. See also POST 26h.
17h	Reserved
18h	Detect CPU information including brand, SMI type (Cyrix or Intel) and CPU level (586 or 686).
19h	Reserved
1Ah	Reserved
1Bh	Initial interrupts vector table. If no special specified, all H/W interrupts are directed to SPURIOUS_INT_HDLR & S/W interrupts to SPURIOUS_soft_HDLR.
1Ch	Reserved
1Dh	Initial EARLY_PM_INIT switch.

1Eh	Reserved	CPU type, CPU speed, full screen logo.	
1Fh	Load keyboard matrix (notebook platform)	2Eh	Reserved
20h	Reserved	2Fh	Reserved
21h	HPM initialization (notebook platform)	30h	Reserved
22h	Reserved	31h	Reserved
23h	1. Check validity of RTC value: e.g. a value of 5Ah is an invalid value for RTC minute. 2. Load CMOS settings into BIOS stack. If CMOS checksum fails, use default value instead.	32h	Reserved
24h	Prepare BIOS resource map for PCI & PnP use. If ESCD is valid, take into consideration of the ESCD's legacy information.	33h	Reset keyboard if Early_Reset_KB is defined e.g. Winbond 977 series Super I/O chips. See also POST 63h.
25h	Early PCI Initialization: -Enumerate PCI bus number. -Assign memory & I/O resource -Search for a valid VGA device & VGA BIOS, and put it into C000:0	34h	Reserved
26h	1. If Early_Init_Onboard_Generator is not defined Onboard clock generator initialization. Disable respective clock resource to empty PCI & DIMM slots. 2. Init onboard PWM 3. Init onboard H/W monitor devices	35h	Test DMA Channel 0
27h	Initialize INT 09 buffer	36h	Reserved
28h	Reserved	37h	Test DMA Channel 1.
29h	1. Program CPU internal MTRR (P6 & PII) for 0-640K memory address. 2. Initialize the APIC for Pentium class CPU. 3. Program early chipset according to CMOS setup. Example: onboard IDE controller. 4. Measure CPU speed.	38h	Reserved
2Ah	Reserved	39h	Test DMA page registers.
2Bh	Invoke Video BIOS	3Ah	Reserved
2Ch	Reserved	3Bh	Reserved
2Dh	1. Initialize double-byte language font (Optional) 2. Put information on screen display, including Award title,	3Ch	Test 8254
		3Dh	Reserved
		3Eh	Test 8259 interrupt mask bits for channel 1.
		3Fh	Reserved
		40h	Test 8259 interrupt mask bits for channel 2.
		41h	Reserved
		42h	Reserved
		43h	Test 8259 functionality.
		44h	Reserved
		45h	Reserved
		46h	Reserved
		47h	Initialize EISA slot

48h	Reserved	5Ch	Reserved
49h	1. Calculate total memory by testing the last double word of each 64K page. 2. Program write allocation for AMD K5 CPU.	5Dh	1. Initialize Init_Onboard_Super_IO 2. Initialize Init_Onboard_AUDIO.
4Ah	Reserved	5Eh	Reserved
4Bh	Reserved	5Fh	Reserved
4Ch	Reserved	60h	Okay to enter Setup utility; i.e. not until this POST stage can users enter the CMOS setup utility.
4Dh	Reserved	61h	Reserved
4Eh	1. Program MTRR of M1 CPU 2. Initialize L2 cache for P6 class CPU & program CPU with proper cacheable range. 3. Initialize the APIC for P6 class CPU. 4. On MP platform, adjust the cacheable range to smaller one in case the cacheable ranges between each CPU are not identical.	62h	Reserved
4Fh	Reserved	63h	Reset keyboard if Early_Reset_KB is not defined.
50h	Initialize USB Keyboard & Mouse.	64h	Reserved
51h	Reserved	65h	Initialize PS/2 Mouse
52h	Test all memory (clear all extended memory to 0)	66h	Reserved
53h	Clear password according to H/W jumper (Optional)	67h	Prepare memory size information for function call: INT 15h ax=E820h
54h	Reserved	68h	Reserved
55h	Display number of processors (multi-processor platform)	69h	Turn on L2 cache
56h	Reserved	6Ah	Reserved
57h	1. Display PnP logo 2. Early ISA PnP initialization -Assign CSN to every ISA PnP device.	6Bh	Program chipset registers according to items described in Setup & Auto-configuration table.
58h	Reserved	6Ch	Reserved
59h	Initialize the combined Trend Anti-Virus code.	6Dh	1. Assign resources to all ISA PnP devices. 2. Auto assign ports to onboard COM ports if the corresponding item in Setup is set to "AUTO".
5Ah	Reserved	6Eh	Reserved
5Bh	(Optional Feature) Show message for entering AWDFLASH.EXE from FDD (optional)	6Fh	1. Initialize floppy controller 2. Set up floppy related fields in 40:hardware.
		70h	Reserved
		71h	Reserved
		72h	Reserved

73h	(Reserved	86h	Reserved
74h	Reserved	87h	NET PC: Build SYSID Structure.
75h	Detect & install all IDE devices: HDD, LS120, ZIP, CDROM?.	88h	Reserved
76h	(Optional Feature) Enter AWDFLASH.EXE if: -AWDFLASH.EXE is found in floppy drive. -ALT+F2 is pressed.	89h	1. Assign IRQs to PCI devices 2. Set up ACPI table at top of the memory.
77h	Detect serial ports & parallel ports.	8Ah	Reserved
78h	Reserved	8Bh	1. Invoke all ISA adapter ROMs 2. Invoke all PCI ROMs (except VGA)
79h	Reserved	8Ch	Reserved
7Ah	Detect & install co-processor	8Dh	1. Enable/Disable Parity Check according to CMOS setup 2. APM Initialization
7Bh	Reserved	8Eh	Reserved
7Ch	Init HDD write protect.	8Fh	Clear noise of IRQs
7Dh	Reserved	90h	Reserved
7Eh	Reserved	91h	Reserved
7Fh	Switch back to text mode if full screen logo is supported. - If errors occur, report errors & wait for keys - If no errors occur or F1 key is pressed to continue : wClear EPA or customization logo.	92h	Reserved
80h	Reserved	93h	Read HDD boot sector information for Trend Anti-Virus code
81h	Reserved	94h	1. Enable L2 cache 2. Program Daylight Saving 3. Program boot up speed 4. Chipset final initialization. 5. Power management final initialization 6. Clear screen & display summary table 7. Program K6 write allocation 8. Program P6 class write combining
<b>E8POST.ASM starts</b>		95h	Update keyboard LED & typematic rate
82h	1. Call chipset power management hook. 2. Recover the text fond used by EPA logo (not for full screen logo) 3. If password is set, ask for password.	96h	1. Build MP table 2. Build & update ESCD 3. Set CMOS century to 20h or 19h 4. Load CMOS time into DOS timer tick 5. Build MSIRQ routing table.
83h	Save all data in stack back to CMOS	FFh	Boot attempt (INT 19h)
84h	Initialize ISA PnP boot devices		
85h	1. USB final Initialization 2. Switch screen back to text mode		

## Howto : Flash the BIOS

What do you need:

To flash your BIOS you'll need

- 1) a xxxxx.bin file that is a file image of the new BIOS
- 2) AWDFLASH.EXE a utility that can write the data-file into the BIOS chip.

The procedure:

Create a new, clean DOS (6 or higher) bootable floppy with "format a: /s".

Copy flash utility and the BIOS image file to this disk.

Turn your computer off. Insert the floppy you just created and boot the computer. As it boots up, hit the [DEL] key to enter the CMOS setup. Go to "LOAD SETUP (or BIOS) DEFAULTS," and then save and exit the setup program. Continue to boot with the floppy disk.

Type "AWDFLASH" to execute the flash utility. When prompted, enter the name of the new BIOS image and begin the flash procedure. Note: If you reboot now, you may not be able to boot again.

After the flash utility is complete, reboot the system.

## Warranty

This product is warranted to be in good working order for a period of one year from the date of purchase. Should this product fail to be in good working order at any time during this period, we will, at our option, replace or repair it at no additional charge except as set forth in the following terms. This warranty does not apply to products damaged by misuse, modifications, accident or disaster.

Vendor assumes no liability for any damages, lost profits, lost savings or any other incidental or consequential damage resulting from the use, misuse of, or inability to use this product. Vendor will not be liable for any claim made by any other related party.

Return authorization must be obtained from the vendor before returned merchandise will be accepted. Authorization can be obtained by calling or faxing the vendor and requesting a Return Merchandise Authorization (RMA) number. Returned goods should always be accompanied by a clear problem description.

